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Weekly Bulletin

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EDITOR

REDUCTION OF CHILDREN'S DISEASES BY PROPER CONTROL MEASURES.*

By LOUIS OLSEN, City Health Officer, Palo Alto.

The effectiveness of the modern health department is still measured largely by its success in the control of communicable diseases. Notable results have been attained along these lines in the control of certain diseases, such as typhoid fever, yellow fever, malaria and even tuberculosis. A steady reduction is also noticed in infant mortality.

Remarkable as have been the reductions in mortality from the above-mentioned causes, the same success is not apparent in the figures for some of the common contagious diseases of children. An examination of the death rates in California from scarlet fever, diphtheria, measles and whooping cough shows that the rates for 1921 are practically the same or greater than the corresponding figures for 1911. In the intervening years the rates have fluctuated, always many deaths occurring from these so-called harmless diseases. In 1921 there were 117 deaths from scarlet fever, 644 from diphtheria, 127 from measles and 191 from whooping cough, while only 147 deaths were caused by typhoid fever. During this year also, the combined number of deaths from scarlet fever, diphtheria, measles and whooping cough (1079) was greater than the combined deaths from typhoid fever, malaria, smallpox, influenza, dysentery, poliomyelitis, encephalitis and epidemic meningitis (847). The latter total could almost include the venereal diseases (442), and still be less than the four children's diseases mentioned above.

These statistics, it must be remembered, are for immediate deaths only, and take no account of the long list of sequelae that follow. In measles alone it is estimated that there are ten cases left with serious complications that may later result in death, for each death reported. Investigations now being conducted will almost certainly show that many other serious complications of adult life are to be attributed to these communicable diseases of childhood. In the face of such figures it may be well to consider whether or not health officials are spending their energies entirely in the right direction. May it not be time to place more emphasis on communicable disease control and particularly control of some of those that are often laughed at and treated jokingly?

In presenting the subject of proper control measures it is not planned to advance any new theory or discovery that will stamp out these diseases. Perhaps there are some who are waiting for such a new discovery in the hope that a quick and easy way will be found as has been the case with yellow fever and malaria. The history of the last ten years proves that a specific remedy is not always all that is necessary. Diphtheria, in spite of anti-toxin and the Shick Test, is with us still. The purpose of this paper is rather to outline a general plan of procedure, regardless of the specific remedies that are to be employed for each particular disease; a plan of procedure that has been known for a long time and that has been proven by experience to be effective.

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*Read at annual meeting of California Health Officers, held at Stanford University, September 19-21, 1922.

The modern theory of infection removes public health activity from the realm of speculation and places it upon a definite and exact basis. When it was discovered that communicable diseases are caused by specific organisms which are transmitted from person to person and that cases never arise spontaneously, the health worker had a sound foundation upon which to build. Control then became a matter of finding the infected persons and controlling the infected discharges for the purpose of preventing their being transferred to other persons. This underlying principle of control is as true today as ever. It matters not that the causative organism is not known for all of the diseases mentioned. They can be controlled by breaking the cycle whereby discharges from the infected individual are transferred to the uninfected individual.

Two characteristics, of such importance as to be almost cardinal virtues, in executing any plan of control are SPEED AND THOROUGHNESS. These *must* be applied to every step hereafter mentioned. If they are, results will follow. A good motto for disease control is, *Get the first case; Get every contact; Prevent additional transference of infected material.* The procedure in effecting proper control of communicable diseases may be separated into four steps, as follows:

1. Reporting.
2. Investigation.
3. Institution of control.
4. Release from restrictions.

The steps are mentioned in the order in which they will be undertaken and in the order of their importance.

Reporting.

It has been often said and written that "No health department can effectively control communicable diseases without first knowing when and where cases are occurring." No statement was ever more true and an effective and complete system of securing reports is the first requisite.

Before discussing the methods of obtaining reports, it may be well to state that reports minus speed are about as useful as a football team without speed. Reports by mail, in cases of scarlet fever, diphtheria, measles and whooping cough are too slow. They should be reported by telephone immediately, in addition to the written card.

Reports will ordinarily first come to the health officer from the local physicians. It is of the utmost importance that the health officer shall have the confidence and cooperation of the physicians in his community, otherwise the difficulties of disease control will be insurmountable. It will be found that if the health officer is reasonable the physicians will be more than ready to do their share.

Granting that the physicians desire to report, cases may sometimes be forgotten and schemes to prevent this are necessary. It has been found that a weekly summary of the morbidity situation, mailed to each physician, stimulates interest and keeps them informed as to what diseases are in existence in the community.

Not all cases will be attended by physicians and the health officer can not depend upon physicians' reports alone in combating an outbreak. This is particularly true of those diseases whose seriousness has been so much underestimated. The following figures illustrate this point. They represent cases covering a period of five years in Palo Alto.

	Cases	Physician	None
Chickenpox	289	89	200
		31%	69%
German Measles	353	156	197
		44%	56%
Measles	383	222	160
		58%	42%
Mumps	170	75	95
		44%	56%
Whooping Cough	187	120	67
		64%	36%

The thing to be emphasized is that the physicians see only a fraction of the total cases, and without systematic search for and discovery of every case and suspected case, no matter what the conditions, it is almost useless to try to work with the small percentage seen by them.

It may also properly be mentioned here that comparisons of the numbers of cases reported in different cities are misleading and lead to wrong conclusions for the reason that the city that is actively and intelligently combating disease will get reports of all or nearly all of its cases, while where no active work is undertaken the number of cases will represent the physicians' reports only.

The largest number of reports of cases unattended by physicians will be obtained by the public health nurse. Such an officer, in investigating absences from school due to illness, will pick up most of the cases in children of school age. If the school teachers are properly instructed in reporting all illness they will sometimes note cases even before they are seen by the nurse. The teacher need not be a diagnostician, but she should know enough to exclude from the class room and hold for observation every child having any symptoms whatsoever. By this is meant even the "common cold" which in many places is permitted to run along unnoticed.

The getting of reports of cases among children of the preschool age unattended by physicians presents the greatest difficulty. These reports are particularly important because children of this age are not under constant observation as are children in school. Clues and hints as to cases will come from neighbors, children in school and others. Each such report must be investigated, no matter how unpleasant the task may be. A single missed case may do untold harm.

The subject of reporting must not be concluded without stating that there are many parents who report promptly themselves. By proper education this group can be enlarged and the health officer's work made correspondingly easier.

Investigation.

Having received the report of a case, the responsibility then rests with the health officer. Here, again, speed is required. The investigation must be commenced at once, not on the next day or on Monday. Every case, whether real or suspected, should be investigated. It is not enough simply to make a record for the office and perhaps placard the premises. Before commencing the investigation the officer should be equipped with cards or other suitable means for recording the results obtained.

In making the investigation the house or premises should be visited, a list made of all persons in it, together with their occupations and whether or not they may be immune to the disease. All persons who have been in contact with the case since the commencement of illness should be listed. As much information as possible bearing on the case should be obtained and recorded. Inquiry as to the probable source and the whereabouts of the patient on the date that the infection was probably acquired should be obtained. The determination of the source, if possible, is important and sometimes constitutes an interesting piece of detective work. Sometimes the source will only be determined after a number of cases have been investigated and the data obtained tabulated and studied.

Where there are many cases and careful and complete records made of each one, the outbreak can usually be diagrammed and studied, information often being obtained that will be of use should another similar outbreak occur.

Institution of Control.

Laws will usually govern the proceedings under this heading. However, laws alone will not control or prevent diseases. The personal element is exceedingly important and a good health officer will accomplish more with poor and insufficient laws than will a poor officer with the best laws and regulations in the world.

The best regulations for the control of communicable diseases are those that accomplish the prevention of spread of the infected material with the smallest amount of interference with the regular routine of the family affected. Modern regulations have this tendency and therefore receive better support from the public.

The main burden will fall on the household where the case exists, provided it is not taken to a hospital. Control must not stop here, however. Every contact or exposure must be watched until the maximum period of incubation has passed. Where the exposure has been limited to a certain day and is definitely known, the restraint placed upon the contact may safely be limited to a few days covering the period when the disease is expected to appear.

Release from Restrictions.

In this, the last step, speed is not so necessary, although there is no reason for restricting the case after the period of infectivity has passed. The determination of the proper time for release will differ with the several diseases and need not be discussed here. The principle is the same for all, *i.e.*, when the danger of spreading the infected discharges has passed, release them. Contacts who pass over the maximum period of incubation without developing the disease should of course be released without further ceremony. Cases should never be returned to school without a written permit from the health officer. A good plan is to require all school absences of more than a day or two to have such a permit before returning. This usually removes the last opportunity of concealing a case in a school child.

The question about fumigation may be asked. The answer is, disinfect, but do not fumigate. Nothing more need be said about disinfection than that it should be carried on concurrently with the course of the disease, and at its termination should consist of a good, honest, mechanical cleansing of the infected area. About the only time to fumigate is in the case where the householder thinks this method is the last word in perfection and where you see that it is useless to try to change his mind. After he has fumigated to his heart's content insist on a final cleansing and scrubbing.

In general it may be stated that marked success has attended the efforts of health workers in controlling diseases where some one discovery was all that was needed. The same success has not been had with those diseases that for the present can only be controlled by painstaking attention to detail. The whole plan for control is dependent upon speed with quick and thorough action.

* *

"Widespread as is disease in its many forms throughout the world, there is something else that, fortunately, is even more general than disease, namely, health. Too long has health been interesting to individuals only when there has been a departure from the normal, as by the onset of some phase of a disease. More recently health has come to be recognized as a distinct entity in itself, a positive state that can be preserved and maintained, not merely the antithesis of disease."—Sir Napier Burnett, M.D.

MORBIDITY

Smallpox.

Seven cases of smallpox were reported last week to date, from the following localities: Fresno 1, Hanford 1, Los Angeles 1, San Jose 1, Santa Clara County 2, Sisson 1.

Typhoid Fever.

Thirty-three cases of typhoid fever were reported last week to date, distributed as follows: Banning 3, Fresno County 1, Glendale 1, Hanford 1, Imperial County 4, Long Beach 3, Los Angeles County 1, Los Angeles 6, Merced 1, Oakland 1, Sacramento 2, San Benito County 1, Santa Ana 1, Santa Paula 1, Shasta County 1, Stanislaus County 1, Stockton 2, Venice 1, Whittier 1.

Cerebrospinal Meningitis.

Two cases of cerebrospinal meningitis were reported to date last week, one each from Los Angeles and Pasadena.

Poliomyelitis.

Los Angeles reported 1 case of poliomyelitis and Los Angeles County two cases of this disease last week, no other cases being reported to date.

Infectious Jaundice.

Hanford reported one case of infectious jaundice last week.

Leprosy.

One case of leprosy was reported to date last week, this case being reported from San Francisco.

COMMUNICABLE DISEASE REPORT.

Disease	1922				1921			
	Week ending			Reports for week ending Sept. 23 received by Sept. 26	Week ending			Reports for week ending Sept. 24 received by Sept. 28
	Sept. 2	Sept. 9	Sept. 16		Sept. 3	Sept. 10	Sept. 17	
Anthrax	2	0	0	0	0	1	0	0
Cerebrospinal Meningitis	1	2	1	2	3	4	2	3
Chickenpox	28	21	32	34	25	21	43	19
Diphtheria	86	82	122	128	109	122	125	101
Dysentery (Bacillary)	9	2	3	1	6	3	6	0
Epidemic Encephalitis	1	3	3	0	6	0	2	0
Gonorrhoea	110	138	106	82	123	73	102	66
Infectious Jaundice	0	0	0	1	0	0	0	0
Influenza	10	3	6	13	4	13	9	7
Leprosy	0	5	0	1	0	0	0	0
Malaria	6	9	9	18	16	9	21	10
Measles	8	7	9	3	4	10	15	7
Mumps	14	15	10	19	41	28	44	30
Pneumonia	63	43	49	45	44	56	54	24
Poliomyelitis	0	3	0	3	14	12	16	15
Scarlet Fever	40	37	46	62	42	39	66	55
Smallpox	29	4	20	7	33	29	43	38
Syphilis	94	130	125	80	134	69	109	47
Tuberculosis	127	167	170	129	150	118	143	115
Typhoid Fever	19	20	36	33	33	34	19	25
Whooping Cough	34	61	37	32	32	42	42	29
	681	752	784	692	819	683	861	591

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